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Coastal Engineering Technical Note

SEAGRASS PLANTING GUIDELINES ATLANTIC COAST, SOUTH OF CAPE CANAVERAL, FLORIDA AND GULF COAST

PROBLEM: Seagrasses play an important role in the biological and physical functions of the coastal marine environment. Seagrass beds may be damaged or destroyed by coastal engineering projects which involve construction in shallow, nearshore waters. Methods are needed to mitigate impacts on these highly productive habitats. Research in recent years has shown that certain seagrasses can be reestablished using transplants from existing beds.

APPROACH: This note provides guidelines for planting of shoalgrass (*Halodule wrightii*) (Figure 1), ditchgrass (*Ruppia maritima*) (Figure 2), manateegrass (*Syringodium filiforme*) (Figure 3), and turtlegrass (*Thalassia testudinum*) (Figure 4). These plants can be used for mitigation and substrate stabilization along the Atlantic coast, south of Cape Canaveral, Florida, and the gulf coast.

SOURCE OF PLANT MATERIAL: Plant materials for specific projects must be obtained from nearby native stands of seagrass, since nursery techniques have not been developed for growing these seagrasses.

OBTAINING AND HANDLING PLANT MATERIAL: Plants should be obtained on the date of intended use. Seeding has been successful only with turtlegrass. These seeds may be collected from mature fruits (1/2 to 1 1/2 inches wide), or as germinated seedlings lying on the sediment surface. To extract the 4 to 5 seeds contained in one piece of fruit, the fruit should be clipped from the stalk and the ovary walls broken open. Seeds may be planted immediately, or they may be stored in seawater. Seeds are planted by pressing them into the substrate. They should be planted only in areas with negligible wave action and with modest currents, not exceeding 1.5 knots.

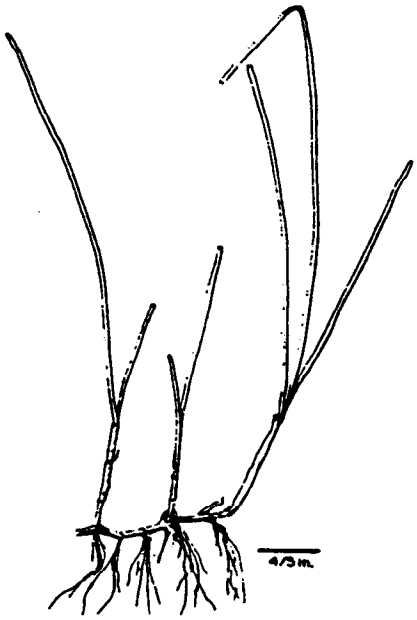

Figure 1. Vegetative Shoalgrass

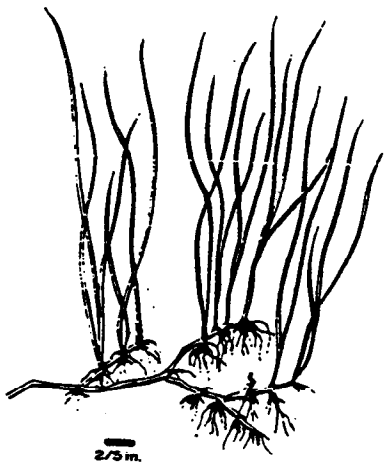

Figure 2. Vegetative Ditchgrass

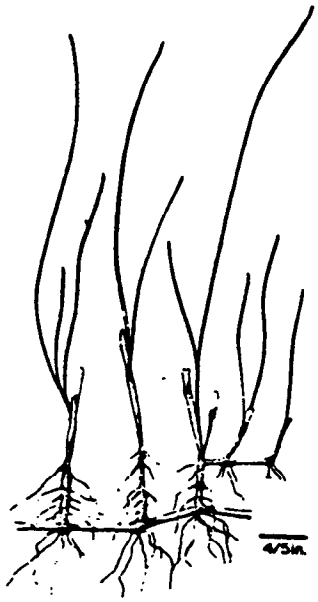

Figure 3. Vegetative Manateegrass

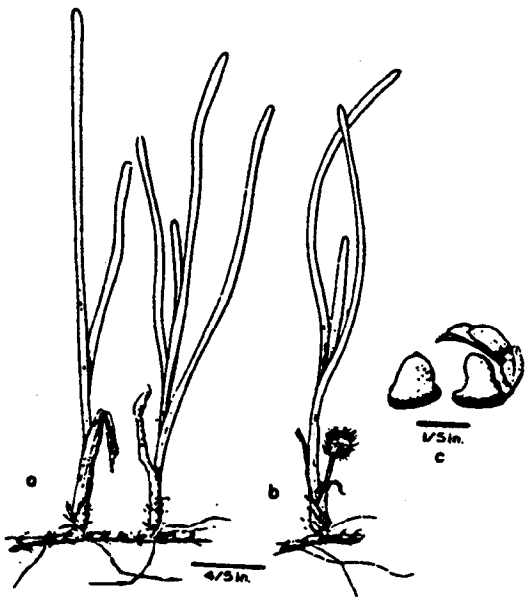

Figure 4. Turtlegrass --
(a) vegetative plants,
(b) reproductive plant with mature fruit,
(c) seed and seedling.

Sprigs should be kept moist and shaded after they are dug. This can be done by placing them in a container covered with canvas or burlap and keeping them slightly wet with seawater until planting. Sprigs are planted by digging a small 3-inch deep hole, inserting the sprigs, and firming the sediment around the sprigs to prevent washout. In areas subject to wave action or with currents exceeding 1.5 knots, sprigs should be anchored with a synthetic, fiber netting, interwoven with paper strips. Information on this material (E-Z Fabric) can be obtained from Gulf States Paper Corporation, Tuscaloosa, Alabama.

Plugs of seagrass can also be used. These plugs should be about 6 to 8 inches in diameter. They can be collected with a coring device that is pushed into the grassbed and the core or plug extracted. The plugs can then be placed into a container covered with wet burlap or canvas to keep the plugs moist for transport. The coring device can also be used to make a 6 to 8-inch hole for planting the seagrass. Plugs should not be planted in areas with currents exceeding 3.5 knots.

PLANTING CONSIDERATIONS:

Planting Water Depth	-	Mean low water to -6 feet for shoalgrass and mean tide level to -6 feet for ditchgrass, manateegrass and turtle grass
Tide Currents	-	3.5 knots or less
Light	-	Turbid water limits plant growth
Salinity	-	Greater than 20 parts per thousand (ppt) but less than 40 ppt for shoalgrass, manatee-grass and turtlegrass; less than 20 ppt for ditchgrass
Soil	-	Cohesive (silts and clays) or a combination of cohesive and granular (sand)
Planting Material	-	Sprigs (3 to 4 leafy shoots on some rhizome), plugs, or seeds. Sprigging is the least costly method.
Planting Time	-	Shoal- and ditchgrass anytime during year. Turtle- and manateegrass - plugs from December to April and seedlings from August to November
Plant Spacing	-	2 feet for sprigs, 3 feet for plugs
Labor	-	400 man-hours/acre for sprigs. No estimate available for seeds or plugs
Fertilizer	-	Not required

ADDITIONAL INFORMATION: For further information contact E. J. Pullen (WESER-C) (601) 634-3650

REFERENCE:

PHILLIPS, R.C., "Planting Guidelines for Seagrasses," CETA 80-2, U.S. Army, Corps of Engineers, Coastal Engineering Research Center, Fort Belvoir, VA., February 1980.